

REMARKS

The non-final Office Action mailed February 7, 2005, has been reviewed and carefully considered. Claims 1-23 are pending in the application. Claims 1, 7, 17 and 23 have been amended. Applicants appreciate Examiner's indication of allowability of claims 4-6, 10-12, and 20-22.

In paragraph 1 on page 2 of the Office Action, the specification was objected to due to certain informalities.

Applicants respectfully traverse the objection to the specification. However, in order to advance prosecution of Applicants' Application, the Applicants have included a replacement abstract. Applicants submit that the amendments to the specification do not narrow or change the scope of Applicants' Application.

In paragraph 2 on page 3 of the Office Action, the information disclosure statement filed December 12, 2004 was objected to due to certain informalities. Applicants have included an information disclosure statement compliant with MPEP § 609 in this response.

In paragraph 3 on page 3 of the Office Action, claims 1-3, 7-9, 15-19, and 23 were rejected under § 102(b) over Hall (U.S. Patent 5,579,457). In paragraph 6 on page 9 of the Office Action claim 13 was rejected under § 103(a) over Hall in view of Vaswani (U.S. Patent 5,835,097). In paragraph 7 on page 10 of the Office Action, claim 14 was rejected under § 103(a) over Hall in view of Cunniff (U.S. Patent 5,842,015).

Applicants respectfully traverse the rejections, but in the interest of expediting prosecution have amended claims 1, 7, 17 and 23.

Applicants' claims recite defining a spot function that combines two functions selected to provide a predetermined spot shape for use in a halftone cell and scaling the spot function using

a parameterized spot radius scaling function that varies according to a value of a first and second spot function ordinate and a shape changing scaling function. Thus, Applicants define a halftone threshold array using a spot function wherein the radius of the spot is adjustable as well as the overall scale.

In contrast, Hall teaches halftone threshold array using irregularly placed curving structures (IPCSs). The IPCSs are defined according to:

$$\sin(K1 + (K2 * D) + K3 * \text{atan2}(DX, DY)).$$

where K1 determines the start angle of the spiral, K2 determines the rate of turn of the spiral, the sign of K3 determines the direction of spiral, the absolute cardinal size of K3 determines the number of arms of the spiral, D is the distance from a pixel to the nearest curving structure center (CSC) and DX and DY are the coordinates of the nearest CSC.

Accordingly, Hall does not teach, disclose or suggest defining a spot function that combines two functions selected to provide a predetermined spot shape for use in a halftone cell. Rather, Hall teaches the use of irregular placed curving structures.

Hall also does not disclose, teach, or suggest scaling the spot function using a parameterized spot radius scaling function that varies according to a value of a first and second spot function ordinate. Rather, K3 merely K3 determines the direction of spiral, the absolute cardinal size of K3 determines the number of arms of the spiral.

Furthermore, Hall fails to teach, disclose or suggest scaling the spot function using a shape changing scaling function in addition to the parameterized spot radius scaling function. Rather, Hall merely formulates the angle of the spiral using K1 and the rate of spiral using K2. The other parameter, D, merely relates to the relative spacing of a pixel to a nearest CSC.

Vaswani and Cunniff alone or in combination fail to remedy the deficiencies of Hall.

Vaswani focuses on perspective texture mapping, and Cunniff merely focuses on real-time control of hardware. Neither Vaswani nor Cunniff disclose, teach or suggest Applicants' "defining a spot function that combines two functions selected to provide a predetermined spot shape for use in a halftone cell" or "scaling the spot function using a parameterized spot radius scaling function that varies according to a value of a first and second spot function ordinate and a shape changing scaling function."

Hall, Vaswani, and Cunniff alone or in combination, fail to disclose, teach or suggest all of the limitations of Applicants' application. Thus the §§ 102(b) and 103(a) rejections are improper. Accordingly, Applicants request that the Section 102(b) 103(a) rejections be withdrawn.

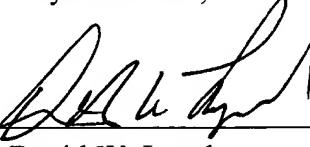
Dependent claims 2-6, 8-16, and 18-22 are also patentable over the references, because they incorporate all of the limitations of the corresponding independent claims 1, 7, and 17. Further dependent claims 2-6, 8-16, and 18-22 recite additional novel elements and limitations. Applicants reserve the right to argue independently the patentability of these additional novel aspects. Therefore, Applicants respectfully submit that dependent claims 2-6, 8-16, and 18-22 are patentable over the cited references, and request that the objections to the independent claims be withdrawn.

On the basis of the above amendments and remarks, it is respectfully submitted that the claims are in immediate condition for allowance. Accordingly, reconsideration of this application and its allowance are requested. Please charge/credit Deposit Account No. 50-0996 (IBMN.026US01) for any deficiencies/overpayments.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicants' attorney of record, David W. Lynch at 651-686-6633 Ext 116.

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Respectfully submitted,

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In accordance with 37 C.F.R. §1.98(a)(2), and the 05 August 2003 Official Gazette Notice, only a copy of each foreign document or non-U.S. patent/application listed on the enclosed Form 1449 is provided.

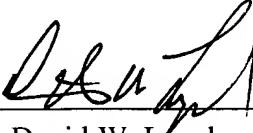
No representation is made that a reference is "prior art" within the meaning of 35 U.S.C. §§102 and 103. In addition, Applicant(s) do(es) not represent that a reference has been thoroughly reviewed or that any relevance of any portion of a reference is intended, and reserve the right to establish otherwise under 37 C.F.R. §1.131 or others.

Consideration of the items listed is respectfully requested. According to M.P.E.P. §609, Applicants requests that the Examiner return a copy of the attached Form 1449, marked as being considered and initialed by the Examiner, to the undersigned with the next official communication.

Authorization is hereby given to charge any additional fees or credit any overpayments that may be deemed necessary to Deposit Account Number 50-0996 (IBMN.026US01).

Respectfully submitted,

Dated: May 1, 2005

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